

CLAIMS

1. A pneumatic radial tire comprising a tread portion, a pair of sidewall portions continuously extending from each side end portion of the tread portion inward in a radial direction, a bead portion disposed at an inner peripheral side of the respective sidewall portion, a radial carcass toroidally extending between a pair of bead cores embedded in the respective bead portions and comprised of one or more carcass plies, each side portion of which ply being wound around the bead core outward in the radial direction, and a reinforcing rubber arranged inside the sidewall portion and further inside the radial carcass and having a crescent form at its cross section, in which one or more cord reinforcing layers having a rubberized structure of steel cords are arranged along a turnup portion of the carcass ply around the bead core, and an interval between the steel cords in the cord reinforcing layer is a range of 2.5-20 times a diameter of the cord.

2. A pneumatic radial tire according to claim 1, wherein the interval between the steel cords in the cord reinforcing layer is a range of 5-12 times a diameter of the cord.

3. A pneumatic radial tire according to claim 1 or 2, wherein the cord reinforcing layer is constructed with twisted cords in which a borderline of an elastic modulus between a low elastic region of not more than 50000 MPa and a high elastic region of not less than 110000 MPa is existent at an elongation of the steel cord of not less than 0.5% but not more than 2.5%.

4. A pneumatic radial tire according to claim 1 or 2, wherein the cord reinforcing layer is constructed with twisted cords having a non-linear characteristic that an elastic modulus at the elongation of the steel cord of less than 0.5% is not more than 50000 MPa and an elastic modulus at the elongation of the steel cord of not less than 0.5% is not less than 110000 MPa.

5. A pneumatic radial tire according to any one of claims 1 to 4, wherein the cord reinforcing layer is arranged between the bead filler disposed above the bead core outward in the radial direction and the turnup portion of the carcass ply within a range of a radial zone ranging from a part corresponding to a contact region between the bead portion and the rim flange to a part corresponding to a position of a maximum tire width.

6. A pneumatic radial tire according to any one of claims 1 to 5, wherein

the cord reinforcing layer has a radial width corresponding to 20-48% of a tire section height and a radially outer end of the cord reinforcing layer is positioned at a height corresponding to not more than 50% of the tire section height.

7. A pneumatic radial tire according to any one of claims 1 to 6, wherein
5 a shear rigidity in a diagonal direction of a square defined by a radial line segment and a circumferential line segment in a plane of the sidewall portion at a part integrally viewing the mutually adjoining cord reinforcing layer and turnup portion of the carcass ply is a range of 300-1000 MPa in case that an elongation of the steel cord is less than 0.5%, and a range of 1000-15000 MPa in case that
10 the elongation is not less than 0.5%.

8. A pneumatic radial tire according to any one of claims 1 to 7, wherein an intersecting angle of the steel cord in the cord reinforcing layer with respect to a meridional segment of the tire is within a range of 50-75°.